

of two regimens of chemotherapy inoperable osteosarcoma: a study of the European Osteosarcoma Intergroup / R.L. Souhami, A.W. Craft, J.W.V. der Eijken // The Lancet. – 1997. - №350. – P. 911-917. doi: 10.1016/S0140-6736(97)02307-6.

33. Tu B. Mesenchymal stem cells promote osteosarcoma cell survival and drug resistance through activation of STAT3 / B. Tu, J. Zhu, S. Liu // Oncotarget. – 2016. - №7(30). – P. 48296-48308. doi: 10.18632/oncotarget.10219.

34. Xiao X. Individualized chemotherapy for osteosarcoma and identification of gene mutations in osteosarcoma / X. Xiao, W. Wang, H. Zhang // Tumour biology. – 2015. - №36(4). – P. 2437-35. doi: 10.1007/s13277-014-2853-5.

35. Punanov Y.A., Andreeva T.V., Gafton G.I., Gudzy Y.V., Safonova S.A., Nabokov V.V., Novik V.I. Rezul'taty kombinirovannogo lecheniya detej i podrostkov s osteosarkomoy [The Results of Combined Therapy in Children and Adolescents with Osteosarcoma]. Moscow, Onkopediatriya [Oncopediatrics]. 2014, №1(2), P. 49-53.

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POINT OF VIEW

S.S. Sleptsov, S.S. Sleptsova, A.G. Egorova, Z.N. Alekseeva YAKUTIA'S LONGEVITY PHENOMENON – MYTH OR REALITY

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ABSTRACT

In the Soviet years the idea was formed, that Yakutia was one of the centers of longevity in the country. Based on the study of archival materials and census data, it was established that this statement was erroneous. The reasons for spreading this false statement are shown. As an illustrative example, the church and statistical documents of the Oymyakonsky and Suntarsky uluses were considered as areas of Yakutia, where the so-called longevity phenomenon was most pronounced. The age of specific residents of Oymyakonsky district from the family list for 1928 was compared with the lists compiled from 1942 to 1946, as a result of which it was established that in most cases the villagers provided overestimated information about their age.

Keywords: demography, Yakuts, aging, longevity, Yakutia.

In 1897, the first general population census was conducted in Yakutia, the results of which found that 1043 centenarians live in the region, including 90 people aged 100 years or more [9]. In connection with the above, at the end of 1898, the manager of the Central Statistical Committee addressed a letter to the governor of the Yakutsk Oblast V.N. Skripitsyn, asking to provide detailed information about each resident of Yakutia who had crossed the centenary: "... A special survey is required about each one, in the ways of understanding all their living conditions and the accuracy of the age shown ..." [16]. Attached to the letter were 50 copies of questionnaires with 38 questions regarding the respondent's lifestyle, physical condition, and heredity.

On February 15th, 1899, by order of the governor, 10 questionnaires were sent to the Yakutsk Oblast District Police Officer, Olekminsky – 12, Vilyuisky – 4, Verkhoyansk – 5 [18]. Later it turned out that when filling them, the age of 19 surviving respondents living in the districts by that time was recorded from hearsay, in connection with which Skripitsyn demanded additional confirmation: ".../

consider it a good practice – in all 19 cases – to ask local clerks to verify the validity of testimony at the age using metric records and, if it is impossible to extract data from the birth records, then trace the testimony of age at confessions and marriage records. In the absence, for any reason, of a second copy of these books at the priests, detailed information will be needed about the time for the provision of metric books to the spiritual consistory with the exact designation of the name of the parish..." [17].

Although the search continued for more than 2 years, in most cases it was impossible to establish the exact date of birth. This was mainly due to the lack of information about these people in church documents, since many parishes appeared later than the date of birth of the respondent. But in the case when it was possible to establish the necessary information, it turned out that the respondent was much younger than expected. So, at that time, the oldest of the verified centenarian of Yakutia was 94-year-old Anna Ivanova Maksimova from the Vilyui District [19], while the rest of the "aged" were 70-80 years old. In

this regard, a rather indicative was the letter of the Zemstvo Assessor of the 3rd District of the Yakutsk Oblast dated December 10th, 1901 addressed to the District Police Officer of the Yakutsk Oblast: «...I received the honor of submitting information about the three elderly persons of Dyupsinsky Ulus and informing you that according to the attached certificates of confessional books, these persons in the year of the general census were not 100 years old, but much less – they were Matrena Ivanova Dmitrieva (according to the confessional book: Matveyeva), only 72 years of age; Anisye Ivanova Ushnitskaya (according to the confessional book: Matrena Ushnitskaya) is only 73 years old, and Kapiton Porokhov is only 76 years old. These certificates from confession books are given by clerks and deserve more confidence than the testimony given during the census, since the Yakut who can remember their years well are is more likely an exception, in most cases Yakuts tend to lose count of their years and continue the counting according to presumptive and major figures, for example: "Min (Yakut for

"I am" – translator's note) a hundred years old, mind you." and so on. In view of this, questioning these people on question sheets is losing all its scientific significance ..." [20].

Confirmation of a small number of centenarians in Yakutia in the XIX century also came from the data obtained from the family census for 1858 [27]. For example, out of 1,121 people living in Oymyakono-Borogonsky Nasleg (now Oymyakonsky Ulus), only 16 (1.4%) were older than 70 years, while the most elderly were 85 years old. The average age of the population was 27.8 years, the average age of the deceased was 49.2 years. Similar information was obtained when analyzing information from the metric books [25, 26]. So, from 1907 to 1910, the average age of the dead Oymyakon residents from 4 years and older was 49.1 years ($n = 96$). At the same time, the share of people from 70 years and older was 25%, from 90 years and over 5.3%. The oldest of the deceased was 96 years old at the time of death.

The indicators under consideration in the Suntarsky District differed, but insignificantly, according to the data of the register of the Krestiakh Church of the Three Saints for 1880, 1885, 1892, 1899-1909, 1911, and 1912. The average age of the dead aged 4 years and older was 47.8 years ($n = 709$ people), the proportion of people aged 70 years and older was 16.9%, and for those aged 90 years and older it was 1.7%. In this case, the maximum age was 100 years (1 person).

Thus, it is obvious that there were no outstanding indicators on life expectancy from the end of the XIX to the beginning of the XX centuries in these 2 uluses, even though they were later viewed as one of the foremost in the Republic for their population's longevity.

After the end of the Russian Civil War, work on statistical registration of the population in Yakutia resumed. Unfortunately, as in the previous census, age data was collected by survey. As a result, it turned out that in 1926 in the Republic the number of Sakha centenarians was 1,248 people, including 176 people. At the age of 100 years or more [3]. That is, in terms of 100 thousand Yakut population, the number of people aged 90 years and older was 529 people (Table 1). But considering that in those years the overwhelming majority could neither read nor write, this fact being taken on trust is unacceptable. For example, among the Sakha from 70 years and older, only 0.11% were literate and this figure remained equally small until the 1940s. Working at the

Dynamics of the number of Sakha centenarians in the period from 1928 to 2010 (according to statistical compilations)

Indicator	Years				
	1928	1950*	1970	1989	2010
Number of people 90 years and older	1248	1023	880	н/д	316
100 years and older	176	162	100	76	13
Number of long-livers per 100 thousand / population	529	454	308	н/д	68

Oymyakon airport from 1943 to 1946, the radio telegraphist E.F. Vyatkina, in her memoirs, wrote the following "...We always treated Yakuts with great respect, but their lives were awful – illiteracy, complete insecurity, subsistence farming and its primitive economy... Once we asked a his age. He went: "Thirty." We asked him how he had counted it. That's when he quickly began counting on his fingers: spring, summer, spring, summer, etc. We then realized that he was 15 years old..." [13].

Taking into account the fact that the data of the first Soviet census are doubtful, we verified 11 people under the age of 50 years and found that the number of years they lived corresponded to birth dates recorded in metric books. As for the older generation, the answer here is ambiguous. When comparing the ages of mothers and their children, it turned out that at least 5 women in the nasleg theoretically were 55-67 years old when giving birth. Unfortunately, it is not possible to clarify the age of these women due to the lack of necessary documents.

Nevertheless, we compared the age of specific individuals (91 people) from the family list of the district for 1928 [24] with their age, which is listed in the lists of exemptions from tax for 1942 and 1944. [21, 22], in the lists of labor soldiers mobilized by the Oymyakonsky Regional Military Commissariat for 1945-1946. [13] and in the lists of personnel hunters for 1946 [23].

We found that age is true or almost true (± 1 year) only in 13.2% (12 cases), understated in 5.5% (5 cases, on average by 3.6 ± 0.8 years), and 81.3% (74 cases) were significantly overstated. For example, there were cases when people indicated an age of 131 and 140 years, whereas in fact they were 81 and 83 years old, respectively. Even without these 2 incredible cases, the average increase in age was 8.9 ± 0.7 years, while 6 people overestimated their age by 20 years or more.

Perhaps a decisive role in the overestimation of age during the war years could have been played by the decree of the Presidium of the Supreme Soviet of the USSR of July 3rd, 1941, establishing a temporary allowance for agricultural tax and personal income tax during wartime. According to it, the

farms of collective farmers and individual farmers who are unable to work due to old age (men: 60 and older, women: 55 and older) who have no able-bodied family members were exempted from paying the tax. According to our data, by 1942, 25.3% (23 people) of all those who overstated their age could enter the category of benefit recipients.

Another good reason for deliberately raising the age in the northern regions could be an attempt to avoid mobilization to the front. During 1944-1945, Verkhoysky, Oymyakonsky and Srednekolymsky districts were planning to mobilize 600 people for the construction of the Krasnoyarsk-Uelkal airfield airports [28]. However, given that the collective farms also needed to fulfill their plan, but there was a catastrophic shortage of people, it is possible that the heads of the agricultural artels introduced these distortions intentionally.

Most likely, the distortions of the age data continued into the post-war period. For example, the real age of a resident of the First Borogonsky Nasleg F.A. Ammosov in 1944 was 81, although he indicated that he was 76 years old. However, in 1957, he was described as a 109-year-old [11], and in 1966, as a 117-year-old resident [15], whereas in fact he was 94 and 103 years old, respectively. By the way, Ammosov died at 105 and should be considered the record holder of the Oymyakonsky District in longevity.

Apparently, the situation described above with the overestimation of age was observed throughout the rural areas of the Republic, as a result of which, after the war, mass media began to regularly report on the so-called Yakut phenomenon of longevity [4-8, 11, 12, 15]. As a rule, such articles always had political overtones – the authors of the articles actively conveyed to the reader the idea that the old men described by them are living witnesses of the improvement of living conditions in the country after the establishment of Soviet power.

Beginning in 1970s, as a result of the natural change of generations, the number of "long-livers" from the 1950s and 1960s began to shrink. Some researchers, taking the statistics of those years on trust, attributed this to environmental

degradation, changes in lifestyle, type and quality of nutrition of the population [2, 10]. But the development of medicine and a significant improvement in the living conditions of the population over the past decades should have sufficiently leveled all the mentioned negative aspects. In our opinion, the main reason for reducing the number of centenarians in the Republic is not environmental factors, but the normalization of statistical records of the population.

Notwithstanding the foregoing, we found real cases of supercentenarians (110 years or more) among the local population of Yakutia. For example, the 117-year-old Varvara Konstantinovna Semennikova (Dyakonova) who lived in the Saskylakh Village of the Anabarsky Ulus and whose age was verified by the staff of the National Archive of the Sakha (Yakutia) Republic. As of November 2017, Semennikova was recognized as the oldest inhabitant of the planet [14].

Nevertheless, the widely publicized assertion that Yakutia was once the center of longevity in the USSR is highly doubtful, and this issue requires additional and more in-depth study not only from health workers, but also from historians.

References

1. Argunov I. Chelovek, ktoromu za sto [A man over 100 years old] Soc. Yakutia, No 251, p. 4.
2. Vasil'eva N.G. Problemy dolgozhitel'stva v Yakutii [The longevity problems in Yakutia] Nauchnyj poisk v sovremennom mire [Scientific search in the modern world]: Materialy VIII Mezhdunarodnoj NPK, Mahachkala, January 21, 2015, pp. 253-254.
3. Vsesoyuznaya perepis' naseleniya 1926 g. Dal'nevostochnyj kraj. Yakutskaya ASSR [All-Union population census in 1926, Far East region, Yakutian SSR] M.: Izdanie CSU SSSR, p. 175, 7 t.
4. Georgiev B. Slovo starogo kolhoznika [Old collective farmer's speech] Soc. Yakutia, 1951, No 241. p. 4.
5. Ermolaev G. Schast'e sovetskogo cheloveka [Soviet man happiness] Soc. Yakutia, 1953, No 44, p. 4.
6. Kuz'min G. 110-letnij kolhoznik [100 year old collective farmer] Soc. Yakutia, 1957, No 36, p. 4.
7. L'vov L. Let do sta rasti nashej bodrosti [Be healthy in 100 years] Soc. Yakutia, 1965, No 120, p. 4.
8. Nikolaev V. God Rozhdeniya – 1857. Dolgozhiteli Yakutii [Year of birth - 1857, The long-livers of Yakutia] Soc. Yakutia, 1964, No 191, p. 4.
9. Pervaya vseobshchaya perepis' naseleniya Rossijskoj imperii 1897 g. [The first General census of the Russian Empire in 1897] v 85-i t. LXXX, Yakutskaya oblast', Pod. red. N.A. Trojnickogo, Izdanie Central'nogo statisticheskogo komiteta Ministerstva vnutrennih del, 1905, pp. 6-7. – 80 t.
10. Petrova P.G. [et. al.] Ekologiya, adaptaciya i zdorov'e: osobennosti sredy obitaniya i struktury naseleniya Respubliki Sakha [Ecology, adaptation and health: habitat features and population structure of the Republic of Sakha] Yakutsk: Sakhapoligrafizdat, 1996, 272 p.
11. Semenov G. Dolgoletie v Yakutii [Longevity in Yakutia] Soc. Yakutia, 1957, No 168, p. 3.
12. Semenov D. 105-letnyaya kolhoznitsa [105-year-old collective farmer] Soc. Yakutia, 1957, No 53, p. 2.
13. Slepsov S.S. Aehroport Ojmyakon — istoriya i sud'by [Oymyakon airport - history and destiny] 2-e izd., pererab. i dop. Yakutsk, Media-holding Yakutia, 2019, p. 408.
14. Tatarinova O.V. Kilbanova E. S. Neustroeva V.N. Fenomen superdolgozhitel'stva v Yakutii [The phenomenon of super-longevity in Yakutia] Uspekhi gerontologii, 2008, T. 21, No 2, pp. 198-203.
15. Teterin V. Bu ogonn'or [The oldman] Eder kommunist, 1966, No 73, p. 4.
16. NA RS (YA) [National archive of the Republic of Sakha Yakutia] F. I-12. Op. 1. D. 19778. p. 1.
17. Tam zhe. [ibid] p. 3.
18. Tam zhe. [ibid] pp. 5-6.
19. Tam zhe. [ibid] p. 16.
20. Tam zhe. [ibid] p. 66-67.
21. Tam zhe. [ibid] F. P-52. Op. 20. D. 87. p. 133.
22. Tam zhe. [ibid] F. P-52. Op. 22. D. 196. p. 50.
23. Tam zhe. [ibid] F. P-52. Op. 24. D. 8. pp. 177-178.
24. Tam zhe. [ibid] F. P-70. Op. 38. D. 353, 354, 355, 356.
25. Tam zhe. [ibid]. F. I-226. Op. 15. D. 571, 609.
26. Tam zhe. [ibid] F. I-226. Op. 16. D. 111, 133.
27. Tam zhe. [ibid] F. 349. Op. 4. D. 333. 64 l.
28. Tam zhe. [ibid] F. 762. Op. 23. D. 208. p. 76.

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